In the Claims

Please cancel claims 3, 4, 8 and 9.

Please amend the pending claims by entering the following substitute claims:

A1

1. (Amended) A composition comprising a hydrophilic portion and a hydrophobic portion joined by an ortho ester linker, wherein the ortho ester linker hydrolyzes at an increasing rate as the pH is reduced below 7 and wherein the hydrophilic portion is selected from the group consisting of methoxypolyethylene, polyethyleneglycol, hydroxylated dendrons, poly(methyloxazoline), poly(ethyloxazoline) and polyvinylpyrrolidone and wherein the hydrophobic group is selected from the group consisting of diacyl glycerols, distearoylglycerol, dipalmitoylglycerol, dimyristoyl glycerol, dioleoyl glycerol, tocopherol, cholesterol, coenzyme Q, and ceramide.

A2

6. (Amended) The composition of claim 19, wherein the hydrophilic portion comprises a targeting ligand.

7. (Amended) The composition of claim 19, wherein the hydrophilic portion comprises a cationic group.

A3

12. (Amended) The composition of claim 11, wherein the ortho ester linker comprises a double ortho ester.

A4

15. (Amended) The composition of claim 19, wherein the ortho ester linker comprises a single ortho ester.

A5

19. (Amended) A composition comprising an encapsulator selected from the group consisting of liposomes, emulsions, micelles and lipidic bodies, wherein the encapsulator comprises a hydrophilic portion and a hydrophobic portion capable of anchoring the composition to the encapsulator joined by an ortho ester linker, wherein the ortho ester linker hydrolyzes at an

A5

increasing rate as the pH is reduced below 7 and wherein hydrolysis of the ortho ester directly detaches the hydrophilic portion from the non-polymeric hydrophobic portion and destabilizes the encapsulator.

A6

22. (Amended) The composition of claim 21, comprising DOPE/methoxypolyethylene glycol 2000-diortho ester-distearoyl glycerol conjugate (POD) in a ratio of about 97:3 to 85:15.

23. (Amended) The composition of claim 21, comprising DOPE/ dimethylethanolamine-ortho ester-cholesterol (DOC).

A7

30. (Amended) An encapsulator for delivering a compound, comprising an amphipathic low pH sensitive lipidic composition comprising an ortho ester linker wherein the encapsulator exhibits degradation of less than 10% within 3 hours at a pH of 7.4 and degradation greater than 50% within 60 min at a pH of 5.0, wherein the encapsulator is selected from the group consisting of liposomes, emulsions, micelles and lipidic bodies, and wherein hydrolysis of the ortho ester linker directly detaches a hydrophilic portion of the lipidic composition from a hydrophobic portion of the lipidic composition to destabilize the encapsulator.

A8

33. (Amended) The encapsulator of claim 32, wherein the ortho ester linker comprises a double ortho ester.

A9

38. (Amended) A method for delivering a drug to a cell comprising the steps of providing an encapsulator comprising a lipidic ortho ester conjugate (LOC) and the drug, wherein the encapsulator is selected from the group consisting of liposomes, emulsions, micelles and lipidic bodies and wherein hydrolysis of an ortho ester linker directly detaches a hydrophilic portion of the lipidic ortho ester conjugate from a hydrophobic portion of the lipidic ortho ester conjugate to destabilize the encapsulator and administering the encapsulator.

39. (Amended) The method of claim 38, further comprising the steps of exposing the encapsulator to reduced pH, degrading the encapsulator and releasing the drug.

42. (Amended) A method for incorporating a lipidic ortho ester conjugates (LOC) into an encapsulator, the encapsulator comprising an ortho ester linker wherein hydrolysis of the ortho ester linker directly detaches a hydrophilic portion of the lipidic ortho ester conjugate from a hydrophobic portion of the lipidic ortho ester conjugate to destabilize the encapsulator, comprising the step of mixing the encapsulator with the lipidic ortho ester conjugate (LOC).

43. (Amended) The method of claim 42, further comprising the steps of:

a) preparing a dry film of the lipidic ortho ester conjugate (LOC);

b) rehydrating the a lipidic ortho ester conjugate (LOC) to form micelles; and

c) combining the micelles with an encapsulator suspension.

A10

44. (Amended) The method of claim 42, wherein the encapsulator comprises a cationic lipoplex further comprising the steps of preparing a cationic lipoplex and coating the lipoplex with the lipidic ortho ester conjugate (LOC).

45. (Amended) The method of claim 42 further comprising the steps of:

a) preparing a dry film of the lipidic ortho ester conjugates (LOC);

b) preparing an encapsulator suspension; and

c) combining the encapsulator suspension with the dry film.

46. (Amended) The method of claim 42, further comprising the steps of :

a) preparing the lipidic ortho ester conjugate (LOC) in a non-aqueous, water miscible solvent

b) preparing an encapsulator suspension; and

c) combining the encapsulator suspension with the lipidic ortho ester conjugate (LOC) in the water miscible solvent.

A11

48. (Amended) A method for storing an encapsulator for delivering a compound, comprising the steps of:

a) providing an encapsulator comprising an amphipathic low pH sensitive lipidic compound comprising an ortho ester linker wherein the encapsulator exhibits degradation of less than 10% within 3 hours at a pH of 7.4 and degradation greater than 50% within 60 min at a pH of 5.0, and wherein hydrolysis of the ortho ester linker directly detaches a hydrophilic portion of the lipidic ortho ester conjugate from a hydrophobic portion of the lipidic ortho ester conjugate to destabilize the encapsulator; and

b) lyophilizing the encapsulator.

50. (Amended) A method for gene transfer comprising the steps of:

a) providing an encapsulator comprising an amphipathic low pH sensitive lipidic composition having an acid labile ortho ester bond and a polynucleotide, wherein hydrolysis of the ortho ester linker directly detaches a hydrophilic portion of the lipidic composition from a hydrophobic portion of the lipidic composition to destabilize the encapsulator;

b) administering the encapsulator to an animal;

c) exposing the encapsulator to reduced pH to degrade the encapsulator; and

d) releasing the polynucleotide.